

Torsion Bar Suspension, Redesigned Chassis, Fresh Styling, Bigger Engine add up to All New . . .

'57 PLYMOUTH

BY RACER BROWN

Engineering developments will be the keynote for a fair share of the 1957 automotive model year. Among the first, and certainly the first in the low-priced field, to herald new and pulsating features, the '57 Plymouth undoubtedly has more new developments than any of its competitors. The hackneyed "all new" tag, which accompanies any car off the assembly line, new or rehash, can rest with ease and meaning on the Plymouth, for it is literally "all new" from road to roof.

Several important engineering features have permitted radical styling changes to be made without compromising passenger space or comfort. For example, the '57 models are nearly *five inches* lower than previous Plymouths. Wheelbase lengths have been increased from 115 inches in '56 models to 118 inches for all standard '57 models except Suburban wagons, which are now 122 inches. With this change and the present state of mind of most automakers, one would expect an additional

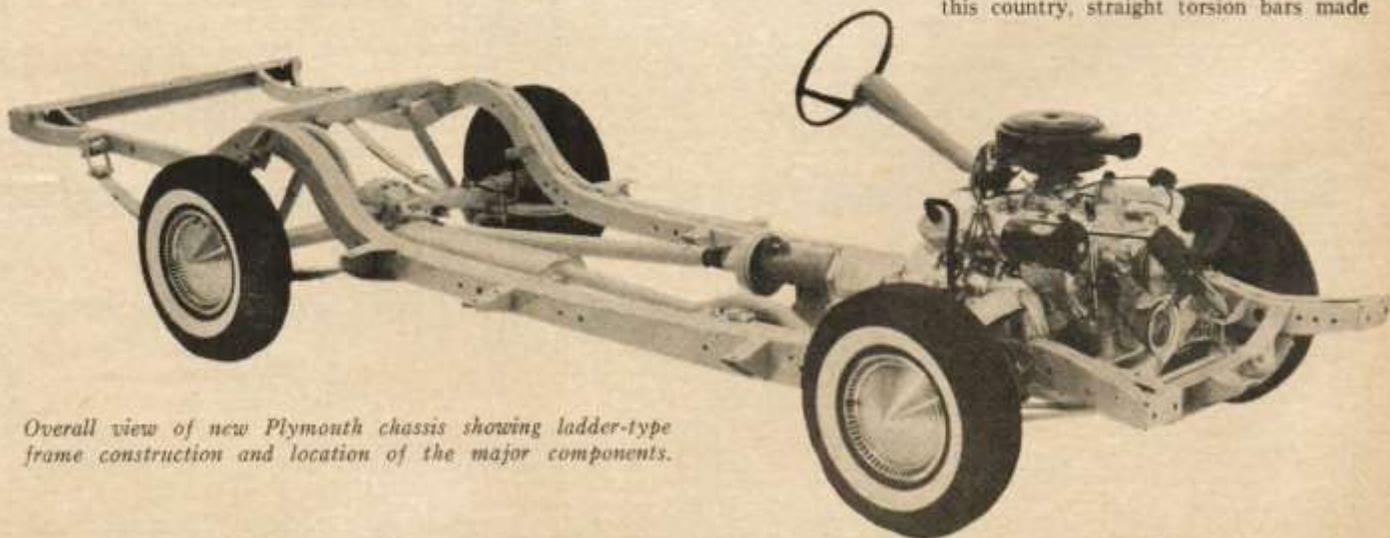
yard-and-a-half or so of overall length to accompany the three-inch increase in wheelbase. But cars built on the 118 inch wheelbase are actually one-tenth of an inch shorter than '56 models, a minute but definite step in the right direction.

However, there is much more to the story than styling; there are many goodies buried beneath the exterior that have directly or indirectly contributed to the new-found freedom of styling and these will be the targets of our observations.

The foundation upon which all else in a contemporary American automobile is built is the frame. To have a completed structure that is sufficiently rigid and stiff in order to resist, either singularly or in combination, the forces imposed upon it, the frame in itself must be rigid and stiff. To this end, the new Plymouth frame is of "ladder" design with five lateral crossmembers. Each side rail is formed of two channel sections welded together to form a full-length box. Rear suspension and body mounting brackets are welded to the

side rails. Front suspension components are bolted to the rails. The front crossmember carries the radiator and a pair of front suspension struts. The second crossmember supports the engine and some of the front suspension components. The center crossmember is the rear engine and transmission mount. The fourth crossmember serves as a rear shock absorber mount and body support and the fifth member is also a body support and an anchor for the rear bumper mounts.

The front suspension of the '57 Plymouth is its most significant mechanical feature. The more conventional front suspension coil springs have been abandoned in favor of a pair of fore-and-aft torsion bars in conjunction with ball joints and a simplified front suspension layout. The use of straight torsion bars as a suspension medium is not new, the first production version having appeared some 23 years ago on the front end of the French Citroën of 1934. Before that, torsion bars were very successfully used in a number of European racing machines. Since 1934, they have been adopted as a production item by a good share of European manufacturers. In this country, straight torsion bars made



Overall view of new Plymouth chassis showing ladder-type frame construction and location of the major components.